

## **REMARKS**

The above-referenced application has been reviewed in light of the Examiner's Office Action dated December 31, 2003. The Examiner's reconsideration of the rejections in view of the following remarks is respectfully requested.

In accordance with the Office Action, Claims 1, 3-6, 10-11, and 15 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

The term "make-link", as used in the specification of the current application, is known in the art as a type of anti-fuse that originally provides an open circuit, and may be programmatically altered once to provide a closed circuit. Once closed, the anti-fuse behaves as a simple connection rather than a fuse. For example, the term can be found in U.S. Patent No. 4,751,197 to Wills, entitled "Make-link programming of semiconductor devices using laser enhanced thermal breakdown of insulator." Thus, the recitation in Claim 1 of "make-links" is not indefinite. Accordingly, it is respectfully submitted that the Claims 1, 3-6, 10-11, and 15 are not indefinite per 35 U.S.C. §112, second paragraph.

In accordance with the Office Action, Claims 1-15 stand rejected under 35 U.S.C. §103(a), as being unpatentable over the Applicants' Fig. 1. Applicants' respectfully submit with traverse that Claims 1-15 are patentable over the Applicants' own Fig. 1 of the current application for at least the reasons set forth below.

As discussed *supra.*, the term “make-link” is indicative of a device that is distinctly different from the fuses F1-F24 pictured in Fig. 1 of the current application. This difference is further evidenced by the advantages make-links have over the prior art fuse elements. As discussed in the specification of the current application, the layout area of a fuse box constructed with a plurality of make-links is about one eighth that of a contrasting fuse box constructed with the same number of poly-silicon fuses, for example. Another difference between a make-link and a fuse depicted in Fig. 1 is that the make-link is normally open until programmed, whereas a fuse, such as one depicted in Fig. 1, is normally closed until programmed. Therefore, a fuse depicted in Fig. 1 is different from a make-link in the subject matter of the current application claims, in at least the manor described *supra.*

Fig. 1 also depicts transistors 49, 51, 53, 55, and 57 each with a source connected to VSS. Claims 6 and 11, however, recite “a plurality of transistors, each of the plurality of transistors having a source connected to the first end of the plurality of make-links”. The source terminals of the cited transistors 49, 51, 53, 55, and 57 do not connect to the cited “first end of the plurality of make-links”. Thus, Claims 6 and 11 are not obvious over Applicants’ Fig. 1.

As discussed *supra.*, Claims 6 and 11 are not obvious over Applicants’ Fig 1. Claims 7-9 depend from Claim 6 and Claims 12-14 depend from Claim 11, necessarily including each of the elements and limitations thereof. Thus, Claims 7-9 and Claims 12-14 are not obvious over Applicants’ Fig. 1.

Thus, it is respectfully submitted that the Claims 1-15 are patentable over the Applicants' prior art structure and disclosure as shown in Fig. 1 for at least the reasons discussed *supra*.

In accordance with the Office Action, Claims 1-6, 10-11, and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,265,054 to McClure. Applicants' respectfully submit with traverse that Claims 1-6, 10-11, and 15 are patentable over McClure for at least the reasons set forth below.

The reference cited in the Office Action, McClure at Fig. 5, does not depict "...a fuse box for replacing defective word/bit lines with normal word/bit lines through the use of 'make-links' or antifuses (66)..." (O.A. at p. 3). Fig. 5 actually depicts a Redundancy Multiplexer, with the use described in McClure in column 7, lines 46-66, as:

"...redundant multiplexers 40 are provided for connecting redundant columns 25 to the appropriate sense/write circuits 13 via I/O bus 21,... however, it is useful that fuses are provided within redundant multiplexers 40 to indicate with which of the eight sense/write circuits 13 a particular redundant column 25 is to be associated. ..."

The fuses used in the Redundancy Multiplexers referenced by McClure are used to select the specific sense/write circuits with which a particular redundant column is to be associated. Claim 1, however, recites "A fuse box, comprising: a plurality of make-links for programming an address of a defective normal memory cell with an address of a corresponding redundant memory cell". Here, the make-links are used to program addresses, rather than to select a specific sense/write circuit to associate with a specific redundant column as in

the McClure reference. Claim 1 is directed toward a different functionality than the McClure Reference. Thus, one of ordinary skill in the art would not have been motivated to apply the teachings of McClure to program the address of a defective normal memory cell. Therefore, Claim 1 is not obvious, and is patentable over that reference.

As discussed *supra.*, Claim 1 is non-obvious over the cited McClure reference. Claim 2 depends from Claim 1, necessarily including each of the elements and limitations thereof. Likewise, Claim 2 is directed toward a different functionality than the McClure Reference. Thus, one of ordinary skill in the art would not have been motivated to apply the teachings of McClure to program an address of a defective normal memory cell. Therefore, Claim 2 is not obvious, and is patentable over that reference.

Claims 3 and 4 are similar to Claim 1. Claim 3 recites “A fuse box, comprising: a plurality of make-links for replacing a defective normal bit line with a corresponding redundant bit line”. Similarly, Claim 4 recites “A fuse box, comprising: a plurality of make-links for replacing a defective normal word line with a corresponding redundant word line”. Here, in each case, make-links are used to replace defective bit lines or word lines, respectively, rather than to select a specific sense/write circuit to associate with a specific redundant column as in the McClure reference. Claims 3 and 4 are directed toward a different functionality than the McClure Reference. Thus, one of ordinary skill in the art would not have been motivated to apply the teachings of McClure to replace a

defective normal bit line, nor to replace a defective normal word line. Therefore, Claims 3 and 4 are not obvious, and are patentable over that reference.

Claims 5, 10, and 15 are directed towards the decoding of the address of a defect cell. Both Claims 5 and 10 recite, *inter alia*., “a fuse box including a plurality of make-links for decoding an address of a defect cell”. Claim 15 similarly recites, *inter alia*., “decoding the address of the defective cell through make-links”. Here, the make-links are used to decode the addresses of defect cells, rather than select a specific sense/write circuit to associate with a specific redundant column as in the McClure reference. Claims 5, 10, and 15 are directed toward a different functionality than the McClure Reference. Thus, one of ordinary skill in the art would not have been motivated to apply the teachings of McClure to decode an address of a defect cell. Therefore, Claims 5, 10, and 15 are not obvious, and are patentable over that reference.

The fuses used in the cited McClure reference are also distinctly different devices from the make-links used in the subject matter of the current application, as discussed *supra*. Thus, Claims 1-6, 10-11, and 15 are not obvious over the cited McClure reference, and are patentable over that reference.


The cited reference does not render obvious what is claimed by the current Claims of the present application. Therefore, it is respectfully submitted that Claims 1-6, 10-11, 15, and those that depend therefrom, are patentable over the cited McClure reference, as well as all other references of record in this case.

## CONCLUSION

Accordingly, it is respectfully submitted that independent Claims 1, 3, 4, 5, 10, 15 are in condition of allowance for at least the reasons stated above. Since Claims 2, 5-9, and 11-14 each depend from one of the above claims and necessarily include each of the elements and limitations thereof, it is respectfully submitted that these claims are also in condition for allowance for at least the reasons stated. Thus, each of Claims 1-15 is in condition for allowance. All issues raised by the Examiner having been addressed, reconsideration of the rejections and an early and favorable allowance of this case is earnestly solicited.

Respectfully submitted,

By:

  
Eric M. Parham  
Registration No. 45,747

Correspondence Address:

F. Chau & Associates, LLC  
1900 Hempstead Turnpike  
Suite 501  
East Meadow, NY 11554  
(516) 357-0091  
FAX (516) 357-0092

FC/EMP/AAP:mel